

**NOTICE OF INTENTION
TO REVISE LARGE MINING OPERATIONS
HOLCIM (U.S.), INC.
DEVIL'S SLIDE QUARRY AND CEMENT PLANT
PERMIT NO. M/029/001**

**Submitted To:
UTAH DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS, AND MINING
SALT LAKE CITY, UTAH**

**By:
HOLCIM (U.S. INC.)
DEVIL'S SLIDE PLANT
6055 E. CROYDON ROAD
MORGAN, UTAH 84050**

Submittal Date:

open

Revision Date:

8-25-2006

Prepared by: Jeaneane Renz/Brian Ward/Tom Newman

Reviewed by: Ken George

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Div. of Oil, Gas & Mining

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HOLCIM (U.S.) INC. DEVIL'S SLIDE QUARRY AND CEMENT PLANT MORGAN COUNTY, UTAH

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Introduction

Due to the process of formation of the Wasatch Range, the Devil's Slide Area has many vertical beds of limestone. The limestone was found to be suitable for the manufacture of Portland Cement so a quarry and plant were built here in 1907. The original quarry, later designated as Quarry 1, was opened to supply the plant with limestone. In the mid 1950's, another quarry, Quarry 2, was opened at the top of the same limestone ridge. The ridge to the west is similar to the original ridge quarried, and Quarry 3 was opened on this ridge in 1965. Sandstone has also been quarried in small amounts in two locations on the ridge west of Quarry 3 for use in the manufacture of the Portland Cement. Since the original plant was built, a succession of plants on the same site have followed. Holcim has operated the current dry plant since 1997.

Holcim (U.S.) inc., submits this NOI providing information describing the proposed changes in mining operations, proposed increase of acreage to be disturbed, a calculation of the estimated costs to reclaim the Plant, Quarry, and the area known as "the Village", and proposed concurrent reclamation of one of the sandstone quarries, now unused, and portions of "the Village." Additionally this submittal includes a revised reclamation surety estimate based on the calculation of the estimated costs to reclaim the Plant and Quarries.

Holcim requests the Division's approval of this NOI with its revisions to permit ACT/029/001 which include, but are not limited to:

1. Revision of the current Permit Boundary to include all lands owned by Holcim that are presently proposed for use as industrial / mining in connection with the Devil's Slide Plant and Quarry and for future expansion.
2. Revision of the current reclamation surety to include all lands that have been disturbed to date and are proposed to be disturbed over the life of Plant and Quarry operations.
3. The sandstone quarry included in the original reclamation plan is no longer active. No material is being removed, and reclamation concurrent with mine operations in other areas is proposed.
4. Variance request from Rule 647-4-111.7 to allow construction of high wall slopes greater than 45 degrees in any mining area within the proposed permit boundary.
5. The proposed method and conduct of reclamation operations, including waste rock disposal areas.

This document has been formatted to follow the outline of Form MR-REV-Notice of Intention to Revise Mining Operations, as required by the State of Utah, Department of Natural Resources, Division of Oil, Gas, and Mining (DOGM). Form MR-REV is submitted for the proposed changes and incorporates by reference the existing reclamation plan ACT/029/001, submitted on May 8, 1987 by Ideal Cement – Devil's Slide Cement Plant, and the Overburden Dump Area revision to the plan, approved March 26, 2002.

I. Rule R647-4-104 – General Information

1. **Name of Operator / Applicant:** Holcim (U.S.) Inc. – Devil's Slide Plant
2. **Name of Company / Corporation:** Holcim (U.S.) Inc.
P.O. Box 122
6211 N Ann Arbor Rd
Dundee, MI 48131
(313) 529-2411
3. **Address of Plant:** Holcim (U.S.) Inc. – Devil's Slide Plant
6055 E. Croydon Road
Morgan, UT 84050
4. **Phone:** (801) 829-6821 **Fax:** (801) 829-2100
5. **Name of Mine / Project:** Devil's Slide Quarry and Cement Plant
6. **Previously Assigned File Number:** ACT/029/001
7. **Location of Proposed Activities:**

COUNTY: Morgan

TOWNSHIP: T. 4 N **RANGE:** R. 3 E
SECTIONS: SE ¼ of Section 13
S ½ of NE ¼ of Section 24
NE ¼ of NE ¼ of Section 24
N ½ of SE ¼ of Section 24

AND

TOWNSHIP: T. 4 N **RANGE:** R. 4 E
SECTIONS: S ½ of SE ¼ of Section 18
SW ¼ of Section 18
N ½ of NW ¼ of Section 30
NW ¼ of NE ¼ of Section 30
All of Section 19

8. Ownership of Land Surface:

Private (Fee) Owners Name: Holcim (U.S.) Inc.
P.O. Box 122
6211 N Ann Arbor Rd
Dundee, MI 48131
(313) 529-2411

Private (Fee) Owners Name: M.R. Wilde & Sons, LLC
200 North 7000 East
Croydon, Utah 84018

9. Ownership of Minerals:

Private (Fee) Owners Name: U.P. Resources – Minerals
Forth Worth, TX 76101-0007

Private (Fee) Owners Name: Holcim (U.S.) Inc.
P.O. Box 122
6211 N Ann Arbor Rd
Dundee, MI 48131

Public Domain (BLM) – precious metals

II.R647-4-105 – MAPS, DRAWINGS, & PHOTOGRAPHS

105.1 Base Map

An index map has been prepared to show the location of the plant and quarry operations within the Devil's Slide, Utah USGS 7.5 minute topographic quadrangle (Figure 105.1). A topographic base map has been prepared using a topographic map prepared from aerial photographs taken in 2001 (Figure 105.2). This base map shows the following as required by the rules:

Property boundaries of surface ownership of all lands which will be directly affected by the mining operations. Holcim (U.S.), Inc., owns all lands directly affected by mining. Lands in the overburden dump area are owned by M.R. Wilde and Sons – Holcim leases these lands;

Perennial intermittent, or ephemeral streams, springs, and other bodies of water; roads, buildings, landing strips, electrical transmission lines, water wells, oil and gas pipelines, existing wells or boreholes, or other existing surface or subsurface facilities within 500 feet of the proposed mining operations;

The proposed route of access to mining operations from Interstate 84 via State Highway 158, the nearest publicly maintained highway;

Areas originally approved to be disturbed, and new proposed disturbance boundary.

105.2 Surface Facilities Maps

A map showing the plant layout, Figure 105.3, has been prepared to identify and show surface facilities, such as buildings, stationary mining/process equipment, roads, utilities, and power lines.

A facility map, Figure 105.4 has been prepared to show the following:

A border clearly outlining the extent of the surface area proposed to be affected by mining operations, the number of acres proposed to be affected, and a border outlining the extent of surface area approved to be affected by prior applications;

The location of known test borings, pits, or core holes;

The location of foundations, roads, and buildings in the Village area.

105.3 Additional Maps

FINAL QUARRY MINE PLAN

The Final Quarry Mine Plan, Figure 105.5, has been prepared to show the final mine plan highwall locations. It includes the following features:

Areas of the site which are to receive differing reclamation treatments, such as the plant and village areas versus the quarry and overburden dump area;

A border clearly outlining the extent of the area to be reclaimed after mining and the number of acres proposed for reclamation.

Highwalls which are proposed to remain steeper than 45 degrees. Slopes proposed to remain steeper than 3h:1v includes all pit slopes that are not shown as highwalls.

Pit slopes are defined as permanent changes to the topography, whereas highwalls are temporary and active parts of the mining process.

III-R647-4-106 – OPERATION PLAN

106.1 Type of Mineral to be mined

Limestone and sandstone will be mined for use as kiln feed (raw materials) for the manufacture of Portland cement.

106.2 Type of operations to be conducted

The existing mining operation is a surface mine operated for the quarrying of rock to be used as a raw material (kiln feed) in the manufacture of Portland cement. Quarry operations include drilling, blasting, loading broken rock, transportation of rock, crushing rock, and rock storage. After being conveyed from the crusher, the rock is pulverized and blended with other raw materials to produce kiln feed for the manufacture of Portland cement. Mining operations are conducted as described in the 1987 reclamation plan. A brief summary of that plan, with proposed changes, is presented here.

Mine Plan Summary

The mining plan involves quarrying the limestone by hauling blasted material off staged benches and loading into haul trucks for transport to the plant for processing into cement or to stockpile for resale. Elevation dictates when quarry operations are required to establish a quarry floor base elevation and grade. The original mine plan (see Section II.A. of the 1987 reclamation plan) called for pit side slopes to be 45 degrees or less. ~~Under the proposed mine plan, quarry benches are designed to be 25 feet high with a face slope of 3v:1h. The highwall location is indicated on Figure 105.5 (Final Quarry Mine Plan) and a variance is requested as described in Section VI of this NOI. All other pit slopes will be 35 degrees. As mining continues and the quarry floor is lowered, slope stability will be investigated to ensure slopes are sufficiently stable. When mining approaches the location of the final highwall, a smooth wall blast will be done on the final highwall surface. Afterwards, no more blasting will be done in that area. Existing slope stability procedures will be continued.~~

Quarry operations will drill and blast the rock prior to excavation. A loader and off-highway trucks will remove the blasted material (overburden, interburden, and limestone) to either the Overburden Dump Area, as approved in a March 2002 revision to the original NOI, the plant stripping area, the crusher or to a stockpile for resale. Other support equipment, such as water trucks, and graders will be used to maintain roads and surfaces needed by the mobile production equipment.

Sandstone raw material was being removed from a small rugged quarry in the NE ¼ of Section 24. This quarry is no longer in use. Reclamation to be performed concurrent with other mine operations is proposed. This will be performed as described in the 1987 reclamation plan (Section IV). Sandstone raw material is now removed from a small quarry located in the NE ¼ of the NE ¼ of Section 24, further north along the same ridge on which the original sandstone quarry was located.

Figure 105.5 shows the final quarry mine plan while Appendix 1 contains cross-sectional views of the final pit topography, post-mining, of Quarries 1, 2, and 3.

106.3 Estimated Acreage

The proposed operations will disturb approximately ~~786.5543-23~~ acres for the removal of limestone and sandstone. This acreage includes lands that will be disturbed for access and haul roads, and catch basins/ sediment ponds. This was done because the roads and ponds are contained within the specified acreage and because many are dynamic, i.e., some roads and sediment ponds are consumed by mine operations, and new ones are built to take their place. Additionally, 184.5 acres of land will be disturbed for the Overburden Dump Area as described in the approved March 2002 revision to the approved reclamation plan. 71.8 acres of land have been disturbed by plant facilities and 20.3 acres of land in the area known as the Village. A total of 819.83 acres are included in the proposed Life-of-Quarry disturbance limit area.

The areas described here also include approximately 6 acres on which limestone and outside raw materials are stockpiled prior to use in the manufacture of Portland cement. This acreage is not in addition to what is described above, it is contained within the given acreage. This data is summarized in Table 106.1~~Table 106.1~~ below.

Table 106.1 – Summary of the Estimated Acreage Disturbed

Areas of actual mining (limestone and sandstone, roads, ponds)	467.6 acres
Overburden waste dump area	184.5 acres
Cement plant facilities	96.7 acres
Area known as "the Village"	37.7 acres
Total Acreage	786.5 acres

106.4 Nature of material, including waste rock/overburden and estimated tonnage

Raw materials mined for economic production are limestone and sandstone. The amount generated annually is dependent on market forces; a typical amount is 900,000 short tons of limestone and 50,000 short tons of sandstone. Table 106.2 – Estimated Annual Volumes and Tonnage~~Table 106.2 – Estimated Annual Volumes and Tonnage~~, provides estimates of both volume and tonnage of limestone, overburden, and interburden to be mined and removed annually.

Table 106.2 – Estimated Annual Volumes and Tonnage

<i>Material removed</i>	<i>Estimated Annual Tonnage (short)</i>	<i>Estimated Annual Volume (cu. yds.)</i>
Overburden	1,080,000	1,836,000
Limestone	900,000	1,530,000
Sandstone	50,000	80,000

106.5 Existing soil types, location of plant growth material

A soil survey of the proposed disturbed areas ~~was ill be~~ completed in ~~2005, the summer following the approval of this permit.~~ This ~~will be is~~ submitted as an addendum to the permit. The soil survey ~~will describes~~ the soils that will be removed and stockpiled to be available for reclamation. Currently, the soil is not recovered in the quarry area because soil is extremely scarce, as was approved in the 1987 Reclamation Plan. In the Overburden Dump area, Holcim will remove 12 inches of topsoil material and stockpile it to be available for reclamation. ~~Table xxx calculates how much soil ihas been salvaged to date and estimated volumnes that will be salvaged in the future. Substitute soil materials may be utilized to mak up any shortfall of available topsoil for reclamation. Following the completion of the soil survey, a soil stripping map will be submitted indicating what sections of land will be stripped for soil and in what sequence. Also, if feasible, it will indicate where soil substitute will be obtained and stockpiled.~~

106.6 Plan for protecting and redepositing existing soils

~~The soil survey to be completed, as described in Section 106.5, will include the location(s) of the topsoil pile and methods for protecting against erosion. Map xxx identifies the locations of existing and future topsoil stockpile areas and the locations and depth of soil replacement for reclamation.~~

106.7 Existing vegetative communities to establish revegetation success.

A vegetation survey will be completed in the spring/ summer following the approval of the permit revision. The survey will provide a baseline inventory, including the percentage of canopy cover. This will be submitted as an addendum to the permit. In the interim, Holcim will continue stripping and placement of overburden soils as approved in the "Overburden Dump Area" revision to the original reclamation plan.

106.8 Depth to groundwater and geologic setting

As described in Section III. A of the 1987 reclamation plan, the water rights in Section 24, Township 4 North, Range 3 East and Section 19, Township 4 North Range 4 East, are owned by the Holcim (U.S.), Inc. The source is one well located as shown on Figure 105.4, the Facility Map. Its water level was approximately 10 feet in 1987 but this varies several feet annually. There are no other water rights or known aquifers in the quarry area. To date, no groundwater has been encountered in any exploratory drill hole. The current quarry area is down grade from the location of the approved Overburden Dump Area. Groundwater seepage into the quarry from the existing Overburden Dump has not been found.

The geologic setting of this area is discussed in the 1987 reclamation plan (Section I, B., Geology).

106.9 Location and size of ore and waste stockpiles, tailings and treatment ponds, and discharges.

The location and size of limestone, overburden and other raw material stockpiles are shown on the three surface facilities maps, as approved in previous applications. Overburden is removed in a manner similar to the removal of limestone.

Waste rock, which consists of overburden and interburden, is stockpiled in the Overburden Dump Area or in an area to await resale. Kiln dust is another form of waste generated at the plant. This dust was once stockpiled in an area between Quarry 2 and Quarry 3 called Bone Yard Hollow, shown on Figure 105.4 (Section II,E. 1987 Reclamation Plan). This dump was closed in February of 2000. A chemical analysis and toxicity analysis of this kiln dust from the original mine plan is presented as Appendix 2.

Due to the nature of the plant today, the amount of kiln dust has been reduced significantly. About 17,000 metric tons, or 18,740 short tons, are produced annually. The majority of this dust is sold and taken off plant. What is not sold is now stockpiled in an area topographically lower in the valley than the area described in the 1987 reclamation plan. Directly underlying this stockpile is a French drain. Surface water does not come into contact with the pile, and water cannot percolate through to enter the groundwater system. Methods used to contain the kiln dust and prevent contamination of surface and groundwater are described in Section II, E., and Section III, B. of the 1987 reclamation plan.

Plans and designs for the drainage channels for runoff in response to snow melt and severe thunderstorms have been addressed in previous applications. For Quarry Hollow and Cottonwood Canyon, these have been addressed under Section IV, 1 of the "Overburden Dump Area" revision to the 1987 reclamation plan. For quarry and plant operations, these have been addressed in Section III, B of the original reclamation plan.

Holcim possesses a General Stormwater Permit issued by the State of Utah (UT-664). There is one outflow point, indicated on the surface facilities maps. This outflow is regulated under the General Stormwater Permit; a UPDES is not required because discharge is not from plant operations. Under this permit, discharge is sampled and a chemical analysis is performed after storm or runoff events in which runoff from plant enters the outflow. This has not yet occurred.

Downstream controls to minimize the migration of sediments during mine operations will be controlled through the field implementation of various Best Management Practices (BMP's). There are various published and non-published BMP's for controlling runoff and migration of sediment. Some appropriate BMP's that could be utilized include runoff interception, water resource protection, gravel filter berms, straw bale barriers, dugout ditch basins, sediment control fences, and vegetative buffer strips. These are submitted under Appendix 3. Holcim reserves the right to use any or all of these methods to control runoff and to implement downstream control measures that will limit the migration of sediments during the life of the quarry.

The following BMP's have been used for control in previous applications submitted by Holcim. The quarry strip material in the Bone Yard and Quarry Hollow is placed on the natural angle of repose (approximately 35 degrees vertical). This has proven to be sufficient to prevent any washing due to the amount of rock and the wide gradation range providing a very stable slope. Additional stabilization is not required prior to reclamation due to the integrity of existing slopes and no evidence of washing or erosion. The catch basins and emergency dams discussed in Section III.B (1987 Reclamation plan) are a major part of sediment control. These are regularly monitored and proper maintenance performed as necessary. The road berms, as required by MSHA safety regulations, also direct minimal road runoff to a catch basin.

Operation Practices (Rule 647-4-107)

IV-107.2 Drainage to minimize damage

A drainage control plan is attached as an Amendment xx.

107.5 Suitable soils removal and stored

Map xxx identifies the locations of existing and future topsoil stockpile areas and the locations and depth of soil replacement for reclamation.

Impact Assessment (Rule R647-4-109)

109.1 Surface and groundwater systems

It is not anticipated that there will be any impacts to the groundwater system. As discussed in Section 106.8 of this application, groundwater has not been encountered in exploratory drill holes. Neither has groundwater been encountered during current mining operations; exploratory drilling indicates that final pit elevation will be well above any groundwater. No springs have been identified or mapped in the approved Overburden Dump Area (USGS, 0.5 minute Devils Slide, Utah, Photo revised 1991). One spring has been identified in the proposed disturbance boundary, but impact to this spring has been minimized. It has been enclosed underneath the plant with discharge being diverted through a culvert into Lost Creek. Also, the plant releases no water from processes, nor are any deleterious materials exposed to become a potential danger to groundwater. All water from office buildings enters the sewage system.

Potential impact to surface water systems is described below:

In a wet spring/early summer an ephemeral wash flows down the center of Quarry Hollow. A livestock reservoir has been excavated in the headwaters of Quarry Hollow to impound this surface water. Construction and operation of the Overburden Dumps is anticipated to have minimal impact on the Quarry Hollow ephemeral wash. During construction, the ephemeral wash in Quarry Hollow will be impounded in the existing reservoir, described above, for livestock watering and dust abatement during initial overburden dumping operations. At completion of construction of the Overburden Dumps, the surface will be graded to reestablish a natural drainage way to prevent surface water retention and direct surface water off the reclaimed dump surface.

In the quarry area, the Quarry Hollow drainage acts very similar to a French drain due to the deposition of strip material from the Quarry and the larger rock at the toe of slope (See photos in Appendix F, 1987 Reclamation plan). The "French drain" capacity is approximately 30% of the filled area which varies in depth from 25 to 30 feet. It provides the capacity to handle runoff, decreases velocity, and maximizes surface area contact to promote percolation.

No other ephemeral washes occur within the permit area.

The Drainage Plan currently utilized at the Devil's Mine site is described in Section III.B of the 1987 Reclamation plan. Runoff is collected in a series of catch basins and allowed to evaporate or percolate. The "Drainage Calculations," as presented in the 1987 Reclamation plan, are included as Appendix 4. These calculations show the theoretical storm runoff quantities and catch basin capacity. These measures have successfully minimized erosion from a recent 100-year storm cycle.

The most significant consideration in analyzing the quarry drainage is that no significant runoff has ever occurred during the life of the mine. For example, on February 17, 1986, there was 1.82 inches of rainfall. The entire snowpack in the quarry area melted during this storm and added to the runoff. Morgan County received \$400,000 in damage to public facilities due to flooding and was declared a State and National Disaster Area. The ten-year storm of 1.4 inches and the theoretical runoff for the two drainages in the quarry area, Quarry Hollow and Bone Yard Hollow, is given in the "Drainage Calculations," Appendix 4.

This amount of runoff did not occur at any time during or after the storm. The Bone Yard drainage had standing water (< 1 inch) on the loading floors and flat areas during the worst of the storm. The emergency dike (catch basin #6) contained less than 0.02 acre feet of water (approximately 400 sq. feet of surface area). There was no significant flow and the standing water on the flat areas percolated below surface in a very short time after the rain ceased.

The Quarry Hollow drainage also showed a very high percolation rate. Above the quarry operation there occurred a small channel flow that came into the "French drain." After that point, no surface flow occurred and it was evident that the flow was underground in the "French drain." At the bottom of Quarry Hollow on the haul road and the sandstone loading floor there was standing water (< 1 inch) during the worst of the storm. It was possible at this time that some of the flow entering the "French drain" was surfacing next to the haul road. This was very slight, if at all, and difficult to determine amounts due to the standing water on the road. The theoretical flow as calculated did not occur and, as stated, no flow occurred in Quarry Hollow in the quarry area.

On August 20, 1986, there was another heavy storm that confirmed the results of the February storm. A total of 2.2 inches of rain fell and the runoff conditions were nearly identical to the earlier storm with the exception that no water surfaced at the bottom of the Quarry Hollow "French drain" and no water was retained by the emergency dike in the Bone Yard drainage. This could be due to the different soil condition that during the February storm most of the ground was frozen.

109.2 Wildlife habitat and endangered species

The Weber River and Lost Creek Drainages have been defined as winter range for Bald Eagles. The Overburden Dump Area is outside the range of these waterways, but the Quarry, Plant, and Village are within the range of these waterways. No impact has been reported during mining operations and it is not anticipated that any will occur in the future. No other listed threatened or endangered plant or wildlife species have been noted in the proposed amendment area.

109.3 Existing soil and plant resources

Development of the proposed disturbance boundary is not projected to have an impact on existing soil and plant resources.

109.4 Slope stability, erosion control, air quality, public health and safety

SLOPE STABILITY

Mining operations are not anticipated to decrease slope stability. Many quarry faces are solid rock; most slopes are 45 degrees or less. Slope stability procedures are used where necessary. Quarry strip material in Bone Yard and Quarry Hollow is placed at a 3h:1v ratio. —This has proven to be sufficient to prevent any washing due to the amount of rock and the wide gradation range of rock providing a very stable slope. Any grading to a 3h:1v slope ratio will be performed using existing mine equipment and surveying.

Overburden Dump operations will not decrease slope stability in Quarry Hollow because the final Overburden Dumps will be placed in a manner that supports and fills existing

slopes. Regrading of the completed Overburden Dumps will be consistent with the approved reclamation plan (Section II), which states: Slope stability of the Overburden Dump soils in the upper slope of Cottonwood Canyon should be similar in nature to Quarry Hollow.

EROSION CONTROL

All fill areas have been placed and contoured with consideration to safety and erosion. To date, no serious erosion has occurred at any fill area. As discussed above, the quarry strip material is placed at the natural angle of repose. Additional stabilization is not required prior to reclamation due to the integrity of existing slopes and no evidence of washing or erosion.

The catch basins and emergency dams (discussed in Section III.B., 1987 Reclamation Plan) are a major part of sediment control. See "Catch Basins and Test Plots," #dcc-1340-2 (Figure 109.1). The road berms, as required by MSHA safety regulations, direct minimal road runoff to a catch basin. The existing roads have no culverts, cross-drains, or ditches. Runoff quantities have never occurred to cause any drainage problems. The roads are all built to MSHA regulations and well maintained by quarry operations.

If there is seen a further need to control erosion, the Operator will employ the appropriate measures.

AIR QUALITY

The Utah Division of Air Quality has issued a permit to Holcim. The permit number is AN-0007015-03. Dust suppression to maintain air quality will be performed as required for normal mining operations in accordance with MSHA safety regulations and state requirements. Dust control will utilize water on roads for suppression. Plant operations use baghouses for dust collection.

PUBLIC HEALTH AND SAFETY

Vehicle access into the Quarry and Overburden Dump area will be limited to haul roads through either the mine or across private property to provide public safety. As required by MSHA regulations, warning signs will be posted at all vehicle entrances and at regular intervals along the perimeter of the disturbance area. In addition, access from the Lost Creek Road is restricted by chain link fencing with a barbed wire top with posted No Trespassing signs to prevent unauthorized access to the mining and plant operations area.

V. Rule R647-4-110 – Reclamation Plan

110.1 Current land use and post_mining land use.

Pre-mining land use of proposed disturbance area includes livestock grazing in the summer and providing winter range for mule deer. Post mining land use for the disturbed area will be the same.

110.2 Reclamation of roads, highwalls, slopes, leach pads, dumps, etc.

ROADS

Minor access roads in the Overburden Dump Area will be left for use by the private landowner as approved in the March 2002 revision to the 1987 Reclamation Plan. All other roads will be regraded to prevent any surface water retention, ripped to a depth of 24 inches, and reclaimed. Revegetation will occur as described in Section 110.5 below.

HIGHWALLS AND SLOPES

As described in Section 105.2, highwalls will be left at a slope of 3v:1h (approximately 71 degrees). Benches will be covered with soil or soil substitute and seeded according to the methods described in Section 110.5 below.

Pit slopes will be left steeper than 3h:1v. They will be left at an angle of 35 degrees, an angle that lies within the average angle of repose for the majority of materials. This has proven so far to be stable within both the quarry and stockpile areas, as described in Section 109.4. As mining progresses, slope stability will be investigated to ensure slopes are stable. As with the highwalls, benches will be covered with soil or soil substitute and seeded according to the vegetation plan described in Section 110.5 below.

PONDS, PITS, IMPOUNDMENTS, & DRAINAGES

All surface water diversion structures and sediment ponds shall be removed and areas reclaimed.

Currently, French drains are being utilized for routing water on the mine site. These are permanent and will remain in place, even after reclamation. As described in Section IV.A of the original reclamation plan, peak flow channels will be constructed to allow runoff to leave the Quarry Hollow and Bone Yard drainages. The size, and expected runoff from the watershed will be calculated and any channels will be sized as needed to control erosion in a 50 year, 6 hour storm event. The channels will be lined with an 8 inch filter blanket and a 12 inch well sorted mixture of rip rap with a D50 of 7 inches (See Appendix 4 for calculations and cross sections).

Natural drainages, dams, and impoundments within the proposed disturbance boundary of the Overburden dump area will be reclaimed as described in Section VII.2 of the Overburden Dump Area Revision of the 1987 Reclamation Plan. Channels and desilting basins have been designed to contain and transport runoff for a 10-year storm event. Desilting basins will be monitored on a regular basis to check for breaches or sediment deposits. Removal of deposits and repairs will be made as necessary.

The final pit floors will be sloped away from the Weber River and towards the highwalls. This will be free draining, but will act as a desilting basin, preventing sedimentation into the Weber River.

WASTE DUMPS

The Overburden Dump Area will be reclaimed as described in Section VI and VII of the approved 2002 Overburden Dump Area revision to the 1987 Reclamation Plan.

The old CKD dump was closed in February of 2000. Stripping material was placed over all open areas of the dump. This material is at least 2 feet thick over the entire dump. Strippings will continue to be placed there as needed during mining operations. The French drain that runs under the dump will be left, and the dump will be covered with soil substitute and reseeded according to the vegetation plan explained in Section 110.5 below.

DRILL HOLES

Any drill hole not consumed during mining will be reclaimed. Reclamation will be consistent with the rules for plugging drill holes (R-647-4-108). The drill hole will then be covered with soil, reseeded, and fertilized according to the practices described in Section 110.5 of this revision.

STOCKPILES

No stockpiles of materials will remain at the time of final reclamation. All stockpiled raw materials will be either used in plant processes or removed from plant prior to final reclamation.

110.3 Surface facilities to be left

~~No s~~Surface facilities to be left at the Overburden Dump Area after reclamation, as approved by the Division in the 2002 application. ~~Structures such as ,will include~~ minor access roads for the private landowner will remain in place. A surface water retention pond for livestock watering may also be left at the request of the private landowner.

All other features such as buildings, roads, pads, or other structures will be removed and the areas reclaimed during the final reclamation process. The area known as the Village will begin undergoing reclamation prior to the final reclamation of the quarry. ~~Plant facilities may remain for use in processing limestone obtained from other claims after the adjacent quarries have been abandoned and reclaimed.~~

110.4 Treatment, location and disposition of deleterious materials

As described above, in Section 110.2, a CKD dump was located in Boneyard Hollow. This dump has since been closed and will be reclaimed as described in Section 110.2.

Reclamation of the village area will include the demolition of all buildings and foundations. All resulting materials will be properly disposed, with the attempt to recycle any recyclable materials. Non-hazardous materials that cannot be sold or removed for free for recycling will be placed in the Overburden Dump Area and eventually buried by over two feet of Overburden. All underground structures less than two feet deep will be removed and disposed of appropriately. Utilities (gas lines, electric lines, etc.) greater than two feet deep will be capped and the structure perforated to allow water to drain through. The area will be ripped, graded, soil or soil substitute will be applied, and the areas reseeded. Until the area is stabilized, appropriate stabilization and erosion and sediment control measures will be employed. The river in the Village area will be allowed to return to its natural state of ebb and flow. Reclamation of the Plant area will be similar with the exception that any materials resulting from demolition that are non-hazardous, non-toxic will be dumped in the Quarries and covered over with at least 2 feet of overburden.

110.5 Revegetation planting program and topsoil redistribution

All benches of disturbed areas will be ripped and rough graded to facilitate revegetation. Appropriate stabilization methods will be used to control erosion and stabilize slopes if necessary. All benches to be revegetated are located on the finished highwall designs. Solid rock outcrops that existed prior to mining operations will not be revegetated. These outcrops are small, numerous in nature, in multiple locations on the existing mine site. These outcrops are native to the existing environment and adjacent lands. A variance which exempted the operator from revegetating rock outcrops was previously granted by the division. A request to extend this variance is described in Section VII.

A plan for removing and stockpiling soil will be submitted with the submission of the soil and vegetation surveys. This survey will also test the soil for fertility. These tests will determine the need for fertilizers and other soil amendments. If soil supplements, fertilizers, or other amendments are required or desirable, they will be applied properly per the manufacturer's specifications or contractor recommendations.

Seedbeds will be prepared to facilitate seedling germination and establishment. Seedbeds will be left in a rough surface condition whenever possible. Areas will be seeded as soon as possible after completion of soil reconstruction. This will be accordance with recommendations from the vegetation survey. Every effort will be made to minimize potential surface erosion.

Reclamation of the proposed disturbance area will be accomplished by planting an approved seed mixture. The seed mixture proposed, listed below in [Table 110.1](#), is the approved seed mixture from the Overburden Dump Area Revision. This mixture, or another suggested by the Division will be used during reclamation.

Table 110.1 – Revegetation Seed Mixture

Common Name	Species Name	Rate lbs/ac (PLS)
Tall wheatgrass	<i>Agropyron elongatum</i>	1.0
Bluebunch wheatgrass	<i>Agropyron spicatum</i>	2.0
'Piute' orchard grass	<i>Dactylis glomerata 'piute'</i>	0.5
'Magnar' Basin Wildrye	<i>Elymus cinereus 'magnar'</i>	2.0
'Ephraim' Crested wheatgrass	<i>Agropyron cristatum 'ephrain'</i>	0.5
Ladac Alfalfa	<i>Medicago sativa</i>	0.5
Yellow sweetclover	<i>Melilotus officinalis</i>	0.5
Palmer penstemon	<i>Penstemon palmeril</i>	0.5
Small burnet	<i>Sanguisorba minor</i>	1.5
Mountain big sagebrush	<i>Artemisia tridentate vaseyana</i>	0.1
Rubber Rabbitbrush	<i>Chrysothamnus nauseosus</i>	0.25
Forage kochia	<i>Kochia prostrata</i>	0.5
Bitterbrush	<i>Purshia tridentate</i>	1.0
Total		10.85 lbs/ac

VI. Rule R647-4-111 – Reclamation Practices

111.12 Topsoil redistribution

Map xxx identifies the locations of existing and future topsoil stockpile areas and the locations and depth of soil replacement for reclamation.

Rule R647-4-112 – Variance

112.1 Variance Request

112.1.1 The rules which a variance is requested from

At some future time a variance may be requested from the following rules:

Rule R647-4-111.7 – Highwalls

Rule R647-4-107.5 – Soils

112.1.2 At some future time aThe variance may be requested and a description of the area that would be affected by the variance would be submitted.

Rule R647-4-111.7 – Highwalls

A variance from Rule R647-4-111.7 was previously granted to the Operator by the Division to allow the construction of highwall slopes steeper than 45 degrees. The areas in which this is approved are no longer the proposed life-of-mine boundaries. A similar variance may be is requested at some future time here to allow highwalls with a slope of 3h:1v. ~~The location of such highwalls is indicated on Figure 105.5.~~

Rule R647-4-107.5 – Soils

A variance was previously granted which exempts the operator from including rock outcrops in the reclamation plan. The operator requests that this variance be extended to apply to the new proposed life-of mine boundary. This would apply to rock outcrops that existed prior to mining, and is isolated to the Quarry area.

112.1.3 Justification for the variance

Rule R647-4-111.7 – Highwalls

The variance from Rule R647-4-111.7 is requested to allow the Operator to construct highwalls with slopes 3v:1h or shallower. This would allow the Operator to increase reserves and extend the life of the mine. Currently, bench faces are steeper than 45 degrees, but the overall slope of the highwall is 45 degrees. Bench faces are stable and have not caused any unstable or unsafe conditions in the mining operation. The stability of the limestone will remain the same if the overall slope were to be made steeper as bench faces would not become any steeper. Also, bedding of the rock being removed is near vertical. Highwalls will be perpendicular to the strike of bedding, taking advantage of the natural stability of the beds. Faces parallel to bedding are subject to erosion: freeze-thaw tends to cause “peeling” along bedding faces. Highwalls will not be constructed in this manner. Additionally, slopes steeper than 45 degrees occur naturally

in the area. Steeper slopes may help the disturbed area conform better to the topography of the surrounding area.

Rule R647-4-107.5 – Soils

The variance from Rule R647-4-107.5 is requested based on the justification given in its previous approval. Rock outcrops are frequent and natural in the area of mining. These outcrops existed before mining began. They are mainly within the pit areas. Soil is absent on these areas. We request these outcrops not be subject to reclamation. Revegetation of these rock outcrops would not only be difficult, but would require disturbing features that are naturally occurring in the area. Rock faces that were created by mining will be revegetated.

Areas considered rock outcrops and proposed to be included under this variance are outlined in Figure 105.5, Final Quarry Mine Plan.

112.1.4 Alternate methods or measures to be utilized

Rule R647-4-111.7 – Highwalls

The alternative to the requested variance would be to continue current mine operations which are conducted as described in the 1987 reclamation plan. This would result in smaller recoverable limestone reserves.

Rule R647-4-107.5 – Soils

The alternative to the requested variance is to rip the rock outcrops to create a base suitable for planting. Soil substitute would need to be obtained from other areas and placed over the base. The areas would then be seeded according the revegetation plan that is part of Appendix 2.

~~VII.~~ Rule R647-4-113 – Surety

Under review.

~~VIII.~~ Signature Requirement

I hereby certify that the foregoing is true and correct. (Note: This form must be signed by the owner or officer of the company/corporation who is authorized to bind the company/corporation).

Signature of Permittee / Operator/Applicant:

Name (typed or print):

Title/Position (if applicable):

Date:

PLEASE NOTE:

Section 40-8-13(2) of the Mined Land Reclamation Act provides for maintenance of confidentiality concerning certain portions of this report. Please check to see that any information desired to be held confidential is so labeled and included on separate sheets or maps.

Only information relating to the location, size or nature of the deposit may be protected as confidential.

 Confidential Information Enclosed: (X) Yes () No

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IX. Holcim (U.S.) Inc. Corporate Officers

President and CEO	Patrick Dolberg
Senior Vice President and CFO	Thomas Aebischer
Deputy CEO and Senior Vice President, Sustainable Development	Bill Townsend
Senior Vice President, Manufacturing	Badreddine Filali Baba
Vice President, Secretary and General Counsel	Susan Diehl

Holcim's corporate offices are located at the following address

6211 North Ann Arbor Road
Dundee, Michigan 48131

and its telephone number is 734-529-2411

APPENDIX 1

Final Pit Design of Quarries 1, 2, & 3

APPENDIX 2

Chemical and Toxicity Analysis of Kiln Dust

Chemical and Toxicity Analysis of Kiln Dust

Plant Devils Slide
 1068401
Date in 3/15/2004
Date out 5/11/2004

Particle Size Analysis

Test (Annual) **Total Metals**

Mg/kg

Antimony 0.941

Arsenic 12.6

Barium 407

Beryllium 0.535

Cadmium 21.1

Chromium 36.4

Lead 328

Mercury 0.392

Nickel 39

Selenium <0.7

Silver 12.6

Thallium 19.5

pH (1:1DI water) 12.64

mg/kg **TCLP**

Antimony <0.002

Arsenic <0.02

Barium 4.07

Beryllium <0.001

Cadmium <0.002

Chromium 0.088

Lead 1.16

Mercury <0.003

Nickel 0.326

Selenium 0.173

Silver 0.069

Thallium 0.790

pH of extract 12.35

WT %

SiO₂ 12.17

AlO₃ 2.67

Fe₂O₃ 1.43

CaO 40.65

MgO 1.78

SO₃ 6.49

Na₂O 0.9

K₂O 9.14

TiO₂ 0.13

P₂O₅ 0.06

Mn₂O₃ 0.03

SrO 0.02

Cr₂O₃ <0.01

ZnO 0.07

L.O.I.(950°C) 16.77

Total 92.3



APPENDIX 5

**Ideal Basic Industries
Form MR-1: 1987 Reclamation Plan**

APPENDIX 6

**Form MR-REV
2002 Overburden Dump Area Revision**